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(54) Title: **TEMPLATED NATIVE SILK SMECTIC GELS**

(57) Abstract: One aspect of the present invention relates to a method of preparing a fibrous protein smectic hydrogel by way of a solvent templating process, comprising the steps of pouring an aqueous fibrous protein solution into a container comprising a solvent that is not miscible with water; sealing the container and allowing it to age at about room temperature; and collecting the resulting fibrous protein smectic hydrogel and allowing it to dry. Another aspect of the present invention relates to a method of obtaining predominantly one enantiomer from a racemic mixture, comprising the steps of pouring an aqueous fibrous protein solution into a container comprising a solvent that is not miscible with water; sealing the container and allowing it to age at about room temperature; allowing the enantiomers of racemic mixture to diffuse selectively into the smectic hydrogel in solution; removing the smectic hydrogel from the solution; rinsing predominantly one enantiomer from the surface of the smectic hydrogel; and extracting predominantly one enantiomer from the interior of the smectic hydrogel. The present invention also relates to a smectic hydrogel prepared according to an aforementioned method.

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/34684

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : A61K 38/17

US CL : 530/353

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 530/353

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
East, STN Bioscience cluster: Medline, Caplus, Biosis. Patents and PCTFull.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AYUB, Z.H et al. Mechanism of the Gelation of Fibroin Solution. Biosci. Biotech. Biochem. May 1993, Vol. 57, No. 11, pages 1910-1912, especially page 1910.	1, 3, 5-8
A	BUNNAK, J. et al. Study on Antibacterial Activity of Hydrogel from Irradiated Silk Protein. JAERI Confer. May 2001, pages 117-129, especially page 118-119.	1-30
X	DINERMAN, A.A. et al. Swelling Behavior of a Genetically Engineered Silk-elastinlike Protein Polymer Hydrogel. Biomaterials. May 2002, Vol. 23, pages 4203-4210, especially pages 4205-4206.	1, 5-8, 15
A	ZHANG, Y. Applications of Natural Silk Protein Sericin in Biomaterials. Biotechnology. June 2002, Vol. 20, pages 91-100.	1-30
A,T,E	JIN, H.J. et al. Biomaterial Films of Bombyx Mori Silk Fibrin with Poly(ethylene oxide). Biomacromolecules. January 2004, Vol. 5, pages 711-717, especially page 712.	1-30



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T"
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